



# RECONCILING EDUCATIONAL FACTORS SUCH AS COGNITION WITH CULTURE

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## ABSTRACT

The mainstream research in educational settings usually gives precedence to cognitive factors at the expense of extrinsic variables such as the individuals' salient cultural values and social belief systems. The present article, however, tries to unfold some reasons as to the importance of cultural factors in attaining educational objectives. That is to say, a multiperspective research frame with cultural issues as the core or accompaniment with cognitive ones can provide a better explanatory capacity for interpretation and analysis of learners' behaviors in educational settings. To this end, the present article provides four main topics of parallel contingencies, a case of value-based education, the significance of infusing culture and education, and distributed cognition as the main hinges of its discussion. Accordingly, the first topic concerns the fact that different choices individuals make are cross-culturally under the influence of external parallel factors that help them in value assignment and meaning making processes. In the second, the discussion, with a particular case study of Iran, purports that the value-based education in eastern countries, sometimes, has been the main source of upward mobility and improvement. The third topic explains that through integrating culture and education we can access some better research niches in the areas such as educational management and assessment, educational injustices, and emergence of new concepts. The last topic also refers to the fact that our cognition should no longer be regarded as solely an internal faculty since, as an example, many socio-technical inventions have expanded our understanding and the trend will continue.

**KEY WORDS:** socio-cultural, contingency, distributed cognition, value-based.

## 1. INTRODUCTION:

Academic learning should be considered as a complex process for which instructors and educators are not singularly responsible. How much a learner prospers is time and again as dependent on his willingness to be committed as on the factors inductive to learning created by the cultural norms of his time (Kang & Chang, 2016). Moreover, one should always keep in mind that different individuals differentially interpret success, based on their hierarchy of goals, and diversity of priorities.

With regard to such insights, researchers in educational fields had better avoid narrow perspectives and embrace various tentative research variables. This way, they can trace learners' cognitive capacities to the factors outside the educational settings. These outside factors that constitute learners' knowledge sharing systems include their families, friends, and the salient beliefs in their social communities (Huila, 2014). In short, the inclusion of multiple rather than limited research variables can better elucidate the trajectories students adopt in learning and performing.

The present study, though very briefly, discusses the reasons why cultural facets should be minded in educational researches. That is to say, for social sciences, a research system that is gravitated to a multi-factorial framework is more powerful in interpreting learners' capacities and behaviors. Of such multiple factors, learners' social interactions, cultural values, and the contexts in which they interact can be studied besides their cognitive strategies while performing a task (Hellermann & Doeher, 2010).

## 2. A BRIEF REVIEW ON THE RELATION OF COGNITION AND CULTURE:

According to Zimmermann (2015), the term culture is a derivation from the Latin word "colere", which means nurture, and thus includes all different types of knowledge people share such as language, religion, art, and etcetera. These bits of knowledge build people's cognitive capacities. In other words, culture organizes people's collective minds (Hofstede, 1984, p.51):

"Culture is the collective programming of the mind which distinguishes the members of one category of people from another".

A group of researches, in the field of language studies, have accordingly indicated that national cultures influence individuals' perceptions, behaviors, beliefs, problem-solving strategies, and negotiation methods (Harrison and Huntington, 2000; Hofstede, 2001; Kirkman et al., 2006; Sincero, 2012). Thus, many researchers are trying their hands in socio-cultural investigations and the trend will continue.

Back in 1990s, the question of inseparability of culture from the classroom teaching was again brought into limelight. For example, Tavares and Cavalcanti (1996) maintained that culture is not only what we perceive in the classroom, but also whatever instructed through language. This led to new investigation pathways in which researchers tried to connect learnability and cognitive development to culture (e.g., Pinker, 1989, 2010). The importance of cultural variables

did not cease here. In fact, some researchers pointed at human cultures as the main source of our evolutionary advanced cognitions (Whiten & Erdal, 2012). These effort to associate cognitive evolution with cultural knowledge were indeed radically new because from the late 17<sup>th</sup> to the start of 18<sup>th</sup> century rationalists and empiricists who were mostly nativists (Gross & Rey, 2012) devotedly advocated the idea that cognition alongside other human faculties were innate, and thus unlearned (Samet, 2014).

In a very recent endeavor, Thompson, Kirby, and Smith (2015), have proposed that the exclusive views of nativists about the innateness of cognition should be discarded because culture has even changed the course of natural evolution and selection and has led to better adaption with environment and a noticeable cognitive growth in humans. In other words, we are not limited by our innate predispositions to act in a certain way. Altugan (2015) also presents an interesting argument on how culture can facilitate or impede learning. He believes that learning and social environments are interrelated and that we bring our social perspectives and cultural identity into learning. In other words, one's socio-cultural background backs up or discourages his motivation to learn. Interestingly, one's learning of different values is channelized through culture.

## 3. DISCUSSION:

As earlier stated, this study tends to focus on the interconnection of culture and cognition within an exploratory frame work. In this regard, the four topics of parallel contingencies, value-based education, the significance of infusing culture and education, and distributed cognition are the main hinges of the present discussion.

### 3.1. Cultural variables as parallel contingencies:

In the field of learning, no single guideline can ensure the highest level of cognitive performance on the part of learners. For sure, becoming a high achiever requires many kinds of government investments on learning. However, learning is a multifaceted phenomenon. Therefore, the question is why we should not think of cultural investment, first.

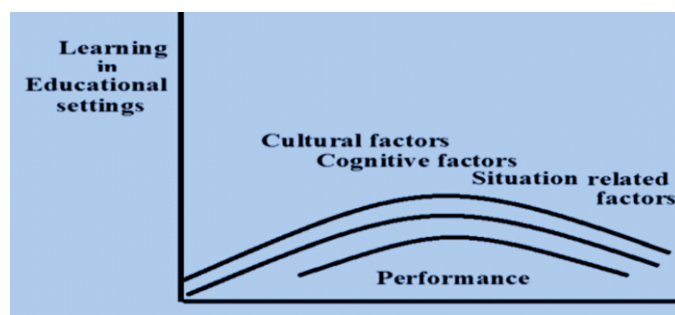
So far, our researches in the educational fields have tried to perpetuate a priority with cognitive variables. However, an individual's grasp of important matters of life is co-shaped by the cultural influences of a setting in which he lives. In other words, while cognitive factors are important variables that influence learning, cultural beliefs affect both learning and cognitive capacities. According to Herrmann, Call, Hernandez-Lloreda, Hare, and Tomasello (2007, p.1) "humans are not just social, but ultra-social". This quality accounts for a different set cognitive skills that are developed culturally and equip the members of a particular society with all means of conformity, intersociability, and sustenance. Therefore, gravitating towards socio-cultural concerns is academically valuable since it seems that learning problems are sometimes approached on a far too restricted basis. In this regard, Tooby (2014, para.5) explains the interrelationship of learning and culture as follows:

"...learning and culture seem so compelling because they map closely to automatic, built-in features of how our minds evolved to interpret the

world.”

In educational researches, motivation as a cognitive asset is another extensively researched topic (Han & Yin, 2016). According to Dornyei (2009, 2011), even in motivation studies, the behavior of learners in performing a task is a function of a wide range of non-linear, dynamic variables as opposed to the traditional views. Such variables could include learner-specific factors, classroom situations, task-related issues, and other external socio-cultural factors. Dornyei, therefore, challenges the traditional view that regards motivation only in terms of generalized motives plus situation-specific motives. In this dichotomy, the generalized motives refer to enduring psychological dispositions of individuals that are mainly task-independent while situation-specific motives cover their temporary responses to a task. He, thus, maintains that an individual's on-task behavior is a function of multiple factors or parallel contingencies.

The idea of parallel contingencies, therefore, advocates the consideration of simultaneous factors, namely socio-cultural variables affecting one's future performance. Of course, Dornyei is not alone. Some other educational theorists also maintain that socio-cultural ideologies influence one's interpretation of specific situations, behaviors, and goals (e.g., Balakrishnan & Low, 2016). Pay attention to the idea of parallel contingencies as shown in the diagram below:



**Figure1. The idea of parallel contingency as explained by Dornyei (2009, 2011)**

On the interconnectivity of culture and cognition, Rosenberg, Westling, and McLeskey (2010) also maintain that cultural teachings affect learners' willingness to perform in noticeable ways. To prove the point, they referred to different behaviors of children in collectivist versus the individualist countries. While the individualists usually encourage showing of ability, the collectivists encourage group harmony. Knowledge about such contingent variables can certainly help educators and researchers interpret learners' behaviors apart from personal biases and inaccuracies. A note-worthy point is that some factors like immigration and personal choices can encourage the members of the west-east divide to renounce their traditional cultural values. Pay attention to the following characterization of western versus eastern educational philosophies that can account for their different mentalities. The characterization has been mainly derived from Olin (2017) and Leaman (2002).

#### ➤ **Culture E:**

- Endurance of hardship = higher tolerance of ambiguity, holistic perspective in problem-solving
- Social perspective = Teleological, end does not justifies means

#### ➤ **Culture W:**

- Independence and individuality = seeking self-expression, less tolerance for ambiguity, principle of non-contradiction, linear- cause-and-effect loop.
- Social perspective = analytic world view, end can justify the means

Riding (2005) also believes that students of varying cultural backgrounds may exhibit greater divarication in their approaches to learning compared to those from either the same or the similar cultural contexts. Thus, learners can develop different types of objectives, outcomes, and achievements cross-culturally. In a qualitative in-depth interview with two culturally different groups of students, they were required to describe their behaviors and intentions in meaning extraction from a text. While one cultural group showed preference for an in-depth meaning extraction, the other group attended to surface learning based on a tacit approval of bits of information not necessarily linked and memorization of things. In this regard, Riding suggested that culture had acted not only as a contingent variable, but also as a co-variant alongside the participants' cognitive factors.

Now, we can perhaps conclude this section by saying that people's beliefs about suitable courses of action and things around them can come from outside sources, but the importance they assign to such sources and the processes of meaning-derivation they use are differentially materialized across cultures. Therefore, a researcher who wishes to study learners in a setting had better mind external contingent variables such as cultural trajectories as well.

### **3.1. A value-based education, a case from Iranian schooling:**

Eastern countries mostly regard ethical values as the core of education of the minds and the characters (Joshi, 2007). In Iranian context of education as well, students and teachers are equally instructed about some ideological values and principles that are supposed to guide them morally through different stages of life; moreover, the concept of religious culture promulgated widely after the 1979 revolution, operates as a spiritual gauge of someone's personality both at an institutionalized and interpersonal level. In this sense, people are required to act committedly and sincerely, not only within their family circles, but also in social settings. The ethos of duty is thus encouraged as an indivisible element of socio-cultural value system that can result in sustainable success, if observed faithfully. This key ethos, as taught and highly upheld after the revolution, warns against compromising humane values at the cost of overly ambitious goals. Perhaps, most Iranians have heard or read about the two famous quotes of the late Iranian leader, Imam Khomeini, as saying:

- “You are obligated to study, if not, it is forbidden for you to be in schools [idly].”
- “The teacher is a trustee other than ordinary; he is a trustee of men.”

These quotes being ideological in essence indicate the reconceptualization of learning as people's sincere duty in the early years after the revolution and after the initiation of Iranian Cultural Revolution (Mojab, 2004). Therefore, the authorities required the educational practitioners and the activists to integrate the sense of duty into educational policies and introduce it as the most ideal goal to students. This tactic, perhaps, could remind students-instructors on the both sides of the education continuum of their commitment to the future architecture of Islamic republic of Iran. Moreover, in 1980s, in tune with the urgent need for learning and progress, the Literacy Corps, this time called Literacy Movement, was reorganized with the aim of eradicating illiteracy and revitalizing the most egalitarian educational system of all time. The results were satisfactory. According to the United Nation's report in 2006, Iran succeeded to stand as the 9th highest literate nation among the world countries (Zand, 2012). All political propagandas aside, such status promotion is just an example that shows people's socio-cultural idealization of educational objectives influences their achievements. Thus, the colossal impact of culture on people's life choices cannot be ignored. In this regard, the Iran's late leader in one of his speeches considers the effect of culture, sometimes, just like that of a weapon (as cited in Tamer, 2010):

“The cultural weapon, according to the textbooks, has great potency than economic and political tools because it affects the soul of a community. Through humiliation, brainwashing, and the spread of consumerism, it is asserted, the imperial powers manipulate the identity of the oppressed nations” (p.74).

These are, of course, just a few examples of how cultural values have affected people's transformative performances. People, generally speaking, tend to confer value on things through the lens of the traditions with which they have been brought up. Oftentimes, they disapprove of some goals because they find them contrary to the socio-cultural conventions of their time (Castro, L. Castro-Nogueira, M. Castro-Nogueira & Toro, 2010). That is, the motives for acting in conformity and non-conformity are culturally bound (Fish, 2012).

Back to the topic of education, we will not be in the right place to think that an individual factor can single-handedly answer all the educational problems. As we know, students, who are standing in the forefront of learning, diverge in the degree of their socialization to mainstream cultural values, their personal approaches to learning and their idealizations of life goals.

For sure, even in academic settings, not all pursue the same objectives; therefore, ascribing satisfactory outcomes and performances merely to learners' cognitive factors apart from their ideologies and cultural values can be an oversimplistic sloppy conclusion. In other words, our inside controlling faculties are intertwined with outside domineering factors of equal importance.

### **3.2. The significance of infusing culture and education:**

According to Vygotsky, the renowned Russian constructivist psychologist, “The social dimension of consciousness is primary in time and in fact. The individual dimension of consciousness is derivative and secondary” (as cited in Wertsch, 1985, p.30).

Our behavioral changes in given situations are thus best understood when we find the social dimensions that guide our choices. One of the aims of educational researches should be infusing different opportunities that lead to new realities and new research niches. Indeed, Individuals' personal characteristics in association with various environments produce wide variety of investigation niches. (Dillon, Bayliss, Stolpe & Bayliss, 2008)

“Niche construction may be thought of simply as the mutually transformative interactions between individuals and groups and the environments in which the interactions take place” (p.26).

According to Humbert (2003), our deepest values are interwoven with life cir-

cumstances and the goals we set to pursue. In fact, we are urged to follow what we want and steer clear of what we dislike through the guidance of our deep values. Then, what we want has one end in society, group interactions, and environment and another in our preference strategies at a time. Therefore, our cognitive capacities together with externally imposed factors provide us with synergic insights and profound contextualized interpretations of what success is. Scott and Palincsar (2013) mention three major benefits of integrating socio-cultural variables to education:

- The employment of socio-cultural theories can promote educational management and ameliorate injustices.
- Many recent concepts are created by brining socio-technological phenomena within educational contexts.
- Applying new socio-cultural products in education leads to the development of new assessment and evaluation techniques.

### 3.3. Distributed cognition rather than cognition alone:

As mentioned, researches in the field of education have a great fascination towards cognition. By cognition, perhaps, we can refer to the “mental lives” and capabilities of individuals (Rahimi, 2014, p.1). The interesting quality of this component of human life is that it can be extended and expanded. Maddox (2010) equals the term extension to stretching out and expansion to spreading out. That is exactly what happens to our mental ability. In other words, our mental faculty can increase its efficacy both quantitatively and qualitatively.

In view of the old definition of the term, cognition was once supposed to be internally residing in an individual, but the idea has mainly been devaluated after Edwin Hutchins developed the concept of distributed cognition in 1990s (Lee, Ng, Rabinovich & Wu, n.d. para.1).

Hollan, Hutchins, and Kirsh (2000) maintain that the distributed cognition or Dcog “extends the reach of our cognitive world beyond the individual alone to encompass the interactions of people with each other, with resources and materials in the environment” (p.175). Pay attention to the diagram below:

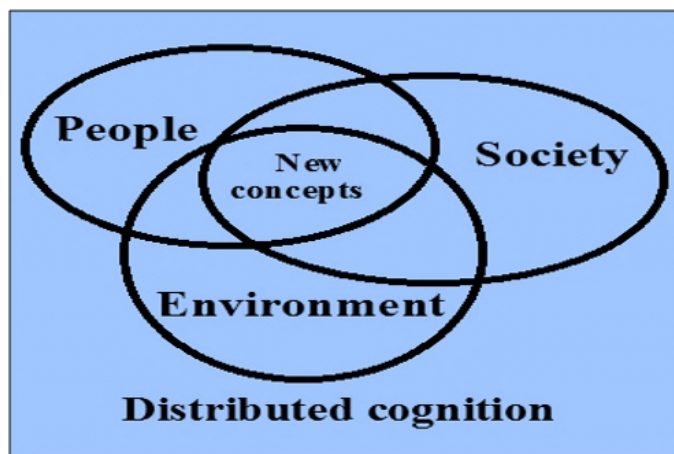


Figure 2. The interaction of people, society, and environments in distributed cognitions

Perhaps, the Dornyei's concept of parallel contingency is now best interpreted with the help of the concept of distributed cognition. We know that the progressive world of information technology allows for a variety of products that involve learners in discovery learning. New types of learning are thus inseparable from the tools that provide potential niches for learning. The diversity of updatable World Wide Web sources and professional online software are all typical examples of new learning niches. As an example, researchers can now make use of online programs such as Endnote to upgrade their knowledge and to cite their article references as required. These are among a faction of numerous digital plans that enable us to extend and expand our cognitive abilities.

In social dimension, many neologisms are added every day to our mental repertoire and web of ideas by the introduction of novel patterns of interactions and brand-new inventions marketed, propagated, and made available both nationally and internationally. As an example, the term such as “webinar”, or a virtual conference, was somewhat meaningless 25 years ago. Similarly, the idea of e-learning course work and education as a new face of learning seemed to be far-fetched in 1970s (Mukherji, 2013). By the same token, the thought to have a non-stop replay of a lesson in an e-learning coursework, learning through gamification in mathematics or new languages, lesson-by-lesson online automatic assessment of knowledge have now turned into the dominant vocabulary of an average individual in urban areas. Again, the topics such as digital humanities, digital modes of information generation, ludology, interfaces for learning,

and categorization of metadata, hashtags, social network, and microblogging are no longer the exclusive semantics of one field of study. Therefore, our future research trends should always make it a point to regard the emergent social phenomena whatever they will be as part of our distributed cognition.

### 4. CONCLUSION:

Educational researches are commonly about the enclosed settings such as schools, colleges, and universities. While at the first glance, the interpretation seems to be all right, it seriously falls short of capturing what education is about in essence. Indeed, educational settings are built and defined by human agents who certainly bring different patterns of socializations, beliefs, and customs into play. While At a certain point of time people may tend to prioritize a set of learning goals, they may want to replace them, at other times, depending on the social changes during their life. Therefore, socio-cultural issues are the constitutive factors that can motivate people to achieve and move forward. To sum up, understanding what works for education requires us to study the contingent parallel variables that affect learners in one way or another. The cultural and socio-technical products that are used by learners affect their cognitive abilities; as a result, the interdisciplinary researches that map these factors are more efficacious in contextualizing educational problems. Within the scope of the present article, we, hence, tried to discuss the significance of socio-cultural aspects by particularly introducing two major constructionist ideas of parallel contingencies and distributed cognition.

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